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VOCATIONAL SCHOOLS

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VOCATIONAL SCHOOLS

PREPARED BY

ARTHUR D. DEAN

Chief, Division of Vocational Schools

The vocational schools will succeed only when they are suited to and an expression of the life of New York State. The problem has been to interpret this life in terms of educational effort. For years a well-knit and unified system of schools has been in existence in this State. With the passage of a law authorizing vocational schools there came the problem of administering them in the letter of the law and at the same time to continue the best traditions of our State system of education.

The problem was deeper than the mere establishment of a few isolated and special schools. It was the problem of establishing a new type of education which would work alongside of, and not be antagonistic to, an older type. It was to be a type that would assist the older in doing better a few things that its good intentions led it to do and at the same time developing within itself a line of work which it could do a bit better than its neighbor who had primarily other things to do.

Courses in cooking, sewing and manual training for the seventh and eighth grades are outlined in the Syllabus for Elementary schools. These courses are entitled to have their work considered as one-half the value of the work required in these subjects in the academic course, and on completing the required number of hours in such subjects after entering the high school the pupils are entitled to receive the full academic credit allowed. Courses in elementary agriculture are offered in schools located in the open country. The operation of such courses is in its initial stage.

Courses in drawing, shopwork, domestic science, domestic art and agriculture have been developed for the high schools. These courses receive adequate recognition in the matter of credits. It is possible for a high school pupil to receive as high as 16 counts in shopwork or 20 counts in agriculture; for a high school girl to receive 8 counts in household arts. Courses in drawing are offered which, for the average pupil, aggregate 8 counts. The local courses of study

in these subjects are approved by the Division of Vocational Schools and inspection of the results is assigned to the same division. The increase in the quantity of manual, household and agricultural arts instruction has been remarkable. The fact that credits are allowed without examination imposes a responsibility. Fortunately, practically every teacher who has been licensed to teach these subjects has been specially prepared for his work in some professional institution or its equivalent; otherwise the practice of allowing credit without examination might result in a lowering of educational standards.

Outside of New York City there are now 109 teachers giving instruction in homemaking to 17,113 girls in the upper grades of the grammar school and in the high school. In the same territory there are now 68 teachers giving instruction in manual arts to 13,320 pupils in the upper grades of the grammar school and in the high school.

THE INTERMEDIATE INDUSTRIAL SCHOOL

The plan as now operating provides that five-twelfths of the school program shall be given over to shop, laboratory and drawing instruction and that the remaining seven-twelfths be devoted to "book studies," which practically amounts to saying that the pupils shall for the remainder of the time take the regular elementary school studies corresponding to the seventh and eighth grades. These studies are related to the industrial studies as far as is possible. Both boys and girls have similar work in English and history. The arithmetic course for boys differs from that for girls. The geography is viewed as an outgrowth of the life-long problem of providing food, clothing and shelter. The physiology is studied from the viewpoint of hygiene and sanitation rather than the structural only. The shop, laboratory and drawing work differs with the sex considered.

The questions naturally arise: Are these children receiving an education? Can they enter the high school? One superintendent writes: "We had no trade school for our graduates of the intermediate industrial school to enter. They were obliged to enter our regular courses in the high school. We had hardly expected that many would care to. That was one reason for advising them to enter the vocational school. The majority, however, did enter the high school and for all I can see are doing as good work as those who finished the eighth grade in the regular schools." On the surface it would seem impossible to do as much bookwork in seven-twelfths of a day's program as the regular seventh and eighth grade pupils accomplish in a whole day; nevertheless, thus far the

pupils in the intermediate industrial schools seem to be accomplishing it. Let us note the possible reasons. We must remember (1) that in the vocational sections a teacher does not handle more than 25 pupils at a time and more individual instruction is possible; (2) that the book studies of English, history and geography may be so correlated that penmanship and spelling are brought into every written lesson and that practice in reading appears in the history and geography; (3) that the bookwork is not interrupted by the visitations of a drawing, music, or manual arts supervisor; (4) that the connection between the shopwork and the bookwork is so close that one naturally assists the other; and (5) that the hours spent in the shop and drawing room afford a relief from brain fatigue.

VOCATIONAL COURSES IN THE HIGH SCHOOL

The Education Department proposes a plan by which an average high school now teaching college preparatory, commercial, industrial and homemaking subjects can economically and effectively develop courses of instruction along the lines suggested by the syllabus which shall have a well-blended, liberal and vocational training. Instead of these schools offering commercial, industrial and homemaking *subjects* it is proposed that they offer well-defined *courses* for pupils who seek different destinations. A certain amount of the work will be common to all these courses and will consist of the prescribed studies which are deemed essential to a sound and symmetrical education and which, under normal conditions, should be prescribed for all pupils in a secondary school. These prescribed studies are English for four years, English history, American history with civics, algebra, plane geometry, biology, and physics. Another division consists of such elective subjects as may be necessary for pupils seeking different destinations.

The "industrial and agricultural purpose" courses have intensive courses in the agricultural and manual arts and drawing. The "homemaking purpose" course is rounded out with strong courses in domestic science and art, household decoration, sanitation, and personal hygiene. It can not be emphasized too often that a vocational course does not consist merely of vocational subjects thrown at random into a high school system. The vocational purpose must be satisfied by a definite course.

The subjects of manual and agricultural arts have not been incorporated in the college preparatory or commercial groups.

No one is willing to say that it is a waste of time for a boy in the college preparatory group to elect some handwork, but a better time to gain the most effective educational value from this subject is when the boy is in the seventh and eighth grades. To take shopwork without accompanying it with strong courses in mechanical drawing, related science and mathematics is to overlook the educational importance of true educational handwork in the secondary school. A line of shopwork which merely consists of making a few articles of furniture, which simply train skill of hand, and which has nothing to do with vocational direction or with other school studies, has not the educational value to which the high school boy is entitled. Of course we are considering that handwork in secondary schools is to have educational value. If it is given merely to gain credits or to keep the boy busy or happy or out of mischief, then, of course, serious educational questions of how to make the manual arts really effective, have no place in this discussion.

Some work in drawing may be advisable for pupils, but in common with the manual arts, the best results from the standpoint of mind development for the majority of pupils are obtained when this subject is given in the grades unless the high school pupil approaches it from one of two standpoints: (1) its relation to the development of the race as expressed in its architecture, its sculpture and its paintings: in this way it becomes a course in art appreciation, or as a handmaid to the study of Greek, Roman, or medieval life; or (2) its relation to the productive industries as they exist today. The first ideal has been but little tried. It is worthy of consideration if drawing is to have cultural value and take rank with language and history. The second ideal is now being approached. Courses are being developed in household decoration, the domestic arts of millinery and homemaking, machine design, house planning, farm buildings, drawing, farm mechanics, etc. The commercial group should have some work in drawing. Good advertising matter; attractive placing of goods for ready sale, and color schemes for store decoration are essential considerations in store management and should be a direct application of good taste and design as taught in the special drawing course for the commercial group.

The law states clearly certain conditions which a vocational school must meet in order to be considered as entitled to special State aid. (1) It must be independently organized — not neces-

sarily a separate building but most assuredly established with a distinct vocational purpose in mind; (2) it must have an enrolment of at least 25; (3) it must employ the full time of a teacher; and (4) it must have a course of study meeting the approval of the Commissioner of Education. The first three conditions admit of no changes and are to be enforced in all places without variation from the word of the law. The fourth condition allows for considerable latitude and discretion. The course of study is not defined by the law; it may vary in different localities and connect with the different local industries, which vary in different parts of this great State. The course of study in agriculture and related subjects may emphasize dairying in St Lawrence county, and fruit growing in Ontario county. An industrial course may concern itself with the shoe industry of Rochester or the knitting mills of Utica; it may omit mechanical drawing in Gloversville and emphasize it in Schenectady. The vocational training may be of rather the general industrial nature in Albany or have its specific trade aspects in Lackawanna. The only points that need to be considered in the establishment of such a school course in a high school system are: (1) Is it established to meet the vocational purpose in education? (2) Does it meet the requirements of the law?

The Department has ruled that five-twelfths of the weekly program of a vocational school department must be given over to the vocational studies chosen from the elective group. This particular ratio was settled upon after considering two propositions. (1) The present requirements for an academic diploma call for 41 counts in certain studies, primarily liberal. These counts closely approximate seven-twelfths of the total number, 72, required for a diploma. (2) Vocational training of high school grade demands a certain amount of liberal training. Preparation for a vocation should have academic recognition through a diploma if the work is of high school grade. The placing of the ratio five-twelfths vocational to seven-twelfths liberal will satisfy the time elements of both divisions of the course of study. Consequently the pupils in the vocational school course have the same liberalizing studies, or their equivalent, as do pupils in other courses. They take the same Department examinations in English, history, algebra, geometry and biology when they follow the same syllabus as other pupils. When the school offers, as it should, special and practical courses

in mathematics and science beyond, or in place of, those just mentioned, the work is inspected and if the definite outlines submitted to the Department are satisfactory, if the teacher is trained for his work, and if it is seen that he can make direct and useful applications of the abstract to the concrete shop, laboratory, or field work of the home and the school, then the Department grants credits without examination. No examinations are given in the vocational subjects proper.

There are now 35 industrial and trade schools, employing 145 teachers. These schools have a day enrolment of 3370 pupils and an evening enrolment of 2933 pupils, or a total enrolment of 6303 pupils. There are 527 other pupils using the equipment, but not enrolled in these schools.

VOCATIONAL COURSES IN AGRICULTURE

In some respects agricultural teaching in the village high school can be more practical in its presentation than industrial teaching in the city schools where many children are unfamiliar with the actual applications of industry and spend their time outside of school hours apart from any real contact with the industrial subjects about which they are studying. The country child is more apt to know something about the practical home work of the farm. If he does not, the parent is at fault.

It is this daily contact with the farm that makes agricultural teaching in our high schools so possible and practical. The country school, above all others, may have the most effective and the most genuine education. At the same time some farmers, usually clear-headed, oppose vocational training because, as they phrase it, "school is the place in which to learn things and my boy can get all the farming he needs under my direction. He has got to farm it all his life and now is his chance to get an education." It is worth while to examine the true purpose and methods of agricultural teaching in our high schools.

The village high school now offers courses in English, history, mathematics, science, languages, and drawing. Forty-one counts are required in the four subjects first named and thirty-one counts may be gained from other subjects offered in the curriculum. It is agreed that every pupil should have four years of English, two years of history, two years of mathematics, and two years of science. If the pupil is going to college he must elect such other subjects as will fit him to meet the entrance

requirements. If he is not going to college and his formal education is to finish with the secondary school he must hunt through the electives announced and find thirty-one counts made up of drawing, music, language, economics, physiology and other subjects offered in the curriculum in order to receive an academic diploma. While these elective subjects have educational value they are not so grouped as to furnish a vocational or even an educational motive for taking them as is the case with these electives offered to the pupil who is going to college. The latter must group his electives for a definite purpose — that of fitting himself to pass the entrance examinations. The boy who is to be a farmer is practically obliged to tag on at the end of the procession while a few people who are going to college set the pace and name the tune.

To find a way by which these tag ends can be grouped to lead to the fulfilment of a vocational purpose as definite as is the case of college preparation is the spirit and method which underlies the agricultural school courses in our village high schools. The purpose of the latter is to prepare boys and girls for living in the open country and the meeting of the requirements of this living in as clean-cut and purposeful a manner as other long-established courses have been doing.

When the question of establishing an agricultural school course in accordance with article 22 of the Education Law was under discussion in the Department, there was called a meeting of men prominent in the varied agricultural interests of the State. Representatives were present from the State Department of Agriculture, the State College of Agriculture, the State Grange, various agricultural societies, the State Agricultural Experiment Station, and the State schools of agriculture. The meat of the discussion resolved itself into two heads: (1) Could the high school give practical teaching in agriculture? (2) Would the pupils electing such a course receive at the same time a liberal education? These were two very practical questions.

It was agreed that the instruction must be practical. To define the word "practical" was the next step. Did it imply that every high school teaching agriculture would be expected to have a cow barn, acres of planted crops and extensive experimental laboratories similar to the State schools and college of agriculture? This question has come up at nearly every district

meeting when the matter of establishing a course in agriculture has been presented. Many taxpayers in these districts through attendance at "farmers' week" are familiar with the extensive equipment of the State schools and they naturally question the feasibility of going into agricultural teaching in the local schools in view of precedents set by the higher schools. The question is a natural one. But citizens miss the point of attack in teaching agriculture in our high schools.

Every village high school as already implied now has courses in biology, physics, chemistry and drawing. The first three require laboratory equipments and a trained teacher of science. These sciences are at the basis of all intelligent farming. Some farmers may not be fully aware of the fact that they are applying scientific principles in their development of soil fertility and farm management. Neither they nor their children may know why the planting of clover increases soil fertility. Both are possibly excusable if they have never received scientific training. But for the boy not to know the why and wherefore of such a method of restoring soil fertility when he is taking a course in science in the local high school is to make science teaching in our high schools a snare and a delusion. We can not censure the father for his lack of knowledge; he never had a fair chance. He wants his boy to have one. We can not blame the boy for not knowing scientific agriculture if he is not taught it. But we can blame the school that does not do its duty by the community.

It is not necessary to have a large farm attached to the school property in order to plant clover. There is land enough at home. It is simply necessary to bring together the school science and the farm practice — to have in the school the "why" and to have on the farm the "how." Any intelligent and responsive farmer can allow his boy to experiment with a few hills of potatoes, using different methods of planting and fertilizing in order to illustrate principles which he has learned from books and school laboratory experiments. In the fall of the year the results of his labor and study may be gathered and compared with those of other pupils. The results of such procedure in our western states amply justify the practicability of such methods. For another illustration let us consider the present instruction in drawing in our village schools. It is centered around design and representation and deals largely with drawing from casts, the making of landscapes, and drawing leaves and flowers. If the boys have any mechanical drawing it

usually relates itself to views of cones, prisms and intersections, or to screw threads, gears and cams. It is taught with absolutely no relation to farm life. A working drawing of a silo, a trap nest, or a poultry house would be worth while. Surely the mental development resulting is as great in the latter as in the former, and, besides, these practical problems have present and future interest to the boys.

There is a place in our system of education for colleges of agriculture and State schools of agriculture. They have a field for preparing boys and girls of their own. They may have extensive equipment. But the vast majority of our youth live at home and attend the village school. They do not need to milk a State-supported cow in order to get a quart of milk for laboratory analysis, or to use a $50,000 State barn to learn something about how to redesign their own barn, or to get away from farm chores that they may go to school in order to learn to be farmers. Some common sense must enter into these matters. If we want our boys and girls to stay on the farm, help the older folks with the chores, and obtain at the same time an education, the village high schools had better get into line to hold these young people. There will be time enough for them to leave the home to go away to school when they are old enough to go and when they have exhausted the educational possibilities of the local schools.

A homemaking course for the girls is proposed. In common with the boys they have a vocation for which to prepare. This vocation may be broader than the term "homemaking" implies. It may include more than practice in cooking, sewing, millinery and dressmaking. Our country girls may be trained in some fields of farm practice which they can easily and effectively do well, such as poultry raising, fruit growing and dairying. The course substitutes household economics for some of the agricultural subjects elected by the boys and at the same time provides for some agricultural elective. In common with the vocational course for the boys it furnishes a liberal training equivalent to that received by other girls in the school who do not elect this course.

Girls as well as boys may be admitted to the regular agricultural courses and are specially advised to elect the work in poultry husbandry, fruit growing, at least one-half the work in dairying, and the home project work, in all cases where a complete course in home economics is not yet established in the school or is not desired by the individual pupil.

It is expected that the majority of high schools which have agri-

cultural teaching will endeavor to adjust this work in such a way that they may avail themselves of the special quota of $500 allowed for the service of first teacher in a vocational school. The Education Law relating to "schools of agriculture, mechanic arts and homemaking" is very specific in reference to this, as already stated.

Separate organization does not require a separate building. It does require a definite and separate register of pupils, a definite yearly report to the Department and a definite purpose distinct enough from any other educational purpose within the school to avoid any obscuring of the vocational idea. The vocational work is not to be mingled or confused with the work of other departments or courses, though including much in common with them. The plan of work need not prevent pupils enrolled in "schools" of agriculture, mechanic arts and homemaking from reciting English, history and other "book studies" in the same classes with other pupils in the local school system. It should be kept in mind that the "agricultural school course" *does not refer merely to a single line of study but to a group of related studies forming in itself a scheme of education having a distinct vocational purpose.*

The special vocational teachers must devote their entire time to teaching agriculture, mechanic arts, cooking, sewing, bookwork relating to agriculture, etc. If the school program is so arranged that these teachers have any spare time they may devote such extra time to teaching the aforementioned subjects to pupils other than those enrolled in the special agricultural, mechanic arts, or homemaking courses.

At least 25 pupils should be enrolled in the "school course" and "homemaking." Pupils who elect only a part of the work in these courses in order to complete requirements for academic graduation, are not counted in making up the 25 pupils. In order to be counted as one of the required 25 the Department has ruled that the pupil must devote to vocational subjects an average of five-twelfths of his time, 30 counts out of a total of 72, throughout the course. In many schools availing themselves of the provisions of the law there are some pupils who elect some agricultural work but do not elect the full course. These pupils take what has already been explained by the term "academic agriculture."

The course of study is intended to be flexible. Selections for intensive study are to be made of topics in the agricultural sylla-

bus that can be most effectively taught from the standpoint of community interest and adequate illustration, while presenting also a well-balanced general knowledge of the whole field of agricultural science and practice. The instruction aims to touch in a direct way the pupil's activities and interests in the home, shop, field and garden, and concerns itself with problems that are concrete and obviously educational because of their practical value.

It is kept in mind that the purpose of these courses under special teachers is to help any resident of the district. Already this type of education is appealing to boys who can not attend school every day or for the full school term, as well as to adults. There is every reason to believe that these special schools may become the centers of agricultural interest. The teachers of agriculture and homemaking should be so expert in their specialties that patrons of the school will seek technical information. The school buildings may well provide exhibit space for samples of crops, seeds, implements etc.

The concrete results so far as they affect the adoption of the special agricultural course appear as follows:

Schools adopting agricultural course	19
Schools postponing adoption until later	12
Schools rejecting adoption	3

The schools here referred to are named under the following headings:

Districts adopting agricultural course

Albion	Little Valley	[1]Penn Yan
Belleville	Lowville	Perry
Belmont	[1]Lyons	Red Creek
Gowanda	Millbrook	Tully
Hancock	Moravia	Walton
Hannibal	Newark Valley	
Highland	North Cohocton and Atlanta	

Districts postponing adoption

Arcade	East Springfield	Horseheads
Batavia	East Syracuse	Manlius
Cambridge	Fairport	Newark
Cincinnatus	Greenwich	
Clinton	Hammondsport	

Districts rejecting adoption

Dundee	Patterson	Sodus

1 Submitted courses not yet approved by the Department.

A number of the schools that have postponed the starting of a "vocational" course in 1911 will in the meantime continue or begin an "academic" course in agriculture under the best teacher available in the school, which may entitle them to Regents credits but not to the State allotment of $500 annually. At present 18 high schools are teaching academic agriculture to 198 students.

THE TRADE SCHOOL

The policy of the open door in education demands, not as some are inclined to favor, the avoidance of a type of school which will definitely prepare, as far as a school may, boys and girls for specific trades, but rather the definite establishment of schools which will accomplish this purpose. It is evident from the discussion of the place of the general industrial school and the vocational school courses in existing high schools, that ample justice has been done to the open door policy. Pupils in the former school have received not only a good elementary education but also have made the beginnings toward a preparation for trade and industry. In the latter type every opportunity has been given to encourage in every possible manner a type of vocational training which may very properly belong to a class of pupils enrolled in a secondary school. Its course of instruction is dignified, thoroughly educational, and worthy of a recognition equivalent to other high school courses. No boy capable of doing what amounts to an equivalent of high school work is prevented from doing vocational work of that order and from receiving academic recognition for his accomplishment. He will, upon graduation, take, or will make his way to, that place which befits one who has completed a course of instruction covering twelve years of his life. For the school system to have been able to do the definite work of preparing pupils of high school age and attainment for definite vocations and at the same time to have given them the equivalent of a high school education, is a test worthy of any secondary school.

The work of preparing our youth for vocations, however, is not completed with either of the schemes proposed, for two reasons. (1) The general industrial school, which is a feeder to the apprenticeship system or to a higher school, is based upon the supposition that somewhere a door is open to its graduates. One of these higher schools is the vocational school course in the high school; the other is the trade school. (2) In order that

there may actually be an open door it is necessary that the school system make provision for those who desire further education but do not care for, and it may be presumed can not successfully maintain the academic standards of a course of study which parallels in any way the regular high school.

The general industrial, or intermediate industrial school, is intended to explore through various kinds of industrial work, the industrial capacities of children. It assumes that teachers will keep a watchful eye upon individual interests. In short, it assumes that when a boy leaves this school he has some knowledge of where he is going and some preparation for his work. Some boys will know, for example, that they want to be plumbers. They know this because the intermediate school gave them some instruction in tinsmithing, sheet metal work, and mechanical drawing together with the elements of other groups of trades. They deserve the open door. To open the door to a high school course is to offer an opening through which they can not and will not pass. In effect, it is really a closed door. To furnish them a place where they can learn a trade after they have settled upon it is the best kind of an open door.

There are some very definite principles in the organization of trade schools which need to be considered.

1 Pupils enter these schools with a well-defined purpose. The period of trying out is finished. They are there to learn a specific trade to the full extent that is possible in any school plan.

2. This type of school absolutely abandons any specific instruction in the so-called liberal studies. This may seem harsh, but we must remember that the pupil has enrolled for one purpose and it is fortunate that the school has even one thing, narrow though it may appear to be, to offer him. The pupil of a trade school is not the type that can be held in school through any liberal studies which are frankly apart from his pressing needs as he sees them. We must recognize that he is sixteen years old, that his school days are numbered and that if his participation in the educative process for eight years before coming to the school has not done something in the way of liberal training, it never will. There is no law compelling him to attend school, possibly no parents who have broad ideas of educational values, no full pocketbook to allow for leisurely walking through the halls of learning — nothing but the bare economic necessities of the individual case. All the culture which he is to receive

must come directly from his trade instruction. The question naturally arises, How much can trade instruction do to make him see beyond the attainment of mere hand skill? A great deal. In the first place, it is assumed that the trade instructor is himself a man who has the true spirit of craftsmanship. He may not be learned, as the saying is, but he has a clean character, believes in honest work, knows something of the economic questions which enter into his trade, reads his weekly trade paper, is able to apply those book and technical studies which have direct application to his craft, and has the ability to inspire his pupils by personal example and instruction to do the best for themselves. In the second place, it is taken for granted that there can never be genuine trade instruction without some accompaniment of the application to the trade practice of mathematics, science, economics, and other subjects.

3 The trade school organization requires a very different method than is now, or is likely to be, in vogue in other types of vocational training. The intermediate and secondary vocational schools have in their organization a number of teachers — some on the shop and some on the bookwork side. The shopwork and bookwork are closely correlated, but this is brought about through cooperation between two kinds of instruction — one primarily vocational, the other primarily liberal and disciplinary. Fortunately, both have the good sense to work together for a common end. The problem in such schools is one of making a close adjustment between the two kinds, and the success of these types, as has already been pointed out, depends largely upon the definiteness of their relationship. One sees, however, that there is always the problem of adjustment, and the more subjects in the course and the greater the number of teachers to which each pupil reports, the more difficult becomes the fulfilment of this adjustment. But the trade school organization is on a very different basis. Here the particular trade represented forms a school unit in itself. There should be no departments of history, English, mathematics, drawing etc. in this type of school. These subjects, or others which are necessary to trade proficiency, must be taught by the teacher of the trade. He is the mastercraftsman who knows what is needed quickly and effectively to prepare pupils for the craft which he represents. He asks no aid of a teacher of mathematics or science. He spends no time attempting to bring about an ad-

justment of the work of another teacher to his particular work. The pupil should not have to adjust two ideas as presented by two teachers. It is one trade taught by one teacher.

Probably an example or two will make the foregoing principle clear. Consider the teaching of the printing trade. A room is set apart in a school building; a first-class, clean-cut printer is engaged as a teacher; a proper equipment is provided; not more than fifteen pupils are enrolled in the class. The trade problem before us is the printing of the school report. Many points must be considered beyond the mere picking up of the type. The type must be selected with due regard to size of book and the expense involved. The proper paper has to be selected, its finish, the size of the sheets to be cut up into leaves, the number of folios estimated from the amount of manuscript for the quantity of paper required, the proper proportion of width to length of page, the colors of the ink, the tone of the cover, the spacing of the title pages, the ornamentation, the tail pieces, the border lines, the position of the cuts inserted, the proper spelling, paragraphing, punctuation etc. Here are questions which lead into arithmetic, design, spelling, grammar and punctuation. We do not need to send the pupil to the drawing teacher, to the teacher of arithmetic, or to the teacher of English. If our teacher of printing is what we expect him to be he knows the answers to the questions and it will be his business to bring before the individual these points when they come up in the problem.

Consider another illustration — that of the plumbing trade. Questions arise about the reading of house plans, of applying simple problems in the flow of liquids, of using different forms of traps, of knowing tables of specific gravities, of weights per linear foot of different materials, of cubical contents of different vessels, of melting points of different solids, and of estimating cost of installation of plumbing fixtures. This work need not be delegated to various departments of mathematics, science, and drawing. Our plumbing teacher knows his business, and the time of the boy is short.

It is readily seen that somehow, unconsciously perhaps, the pupil has absorbed some of the disciplinary studies of which we were afraid he was about to be deprived. Furthermore, the teacher can do something more than we sometimes think toward giving the pupils a taste for the liberalizing studies of economics

and history. It is assumed that our teacher is really alive to the human needs of the vocation, that he knows about trade unionism, the effect of hours and wages upon prices, something of the history of printing, the benefits to human progress of the invention of the printing press, and a score of other points which have made him, through reading and observation, an intelligent printer. One has no right to suppose for a moment that this information is not to be drawn out of our instructor by wide-awake boys, that the class is not going to ask questions about these things, that the teacher is not going to respond. Besides, we expect that the school will invite men prominent in the trade to talk to the boys about the technical and economic questions involved in the art of printing. There is more "education" in a trade school than one is prepared to see at first glance. To be sure, some trades do not appear to have very much educational content. It is easy to settle this point, for these trades will not be taught in a school. Trade schools are a part of an educational system — not a part of a scheme which merely supplies the labor market with a material less capable than it now has.

4 The trade schools must keep longer hours than the present schools. In this respect, as in many others, they must approach shop conditions. They have no connection with other schools; the pupils do not recite any subject with others. The trade school is the professional school for the industrial worker and it presupposes that it is his final schooling place and that he desires to make his time of attendance as short as possible, consistent with all-round trade training. He is there to reduce his time of apprenticeship and every hour counts. If he was not in the school he would be in the shop or factory working 54 hours a week and it will not be any hardship to provide longer school hours for him.

5 The trade school pupil ought, in justice to his vocational preparation, abandon all ideas of going to college; not that he will be prevented from going to a higher school, but rather that his particular open door leads to the factory or shop. It is his professional school just as for others, is a law, medical, or dental school. No lawyer is prevented from becoming a minister, but a change in vocational purpose necessarily means a retracing of educational effort. At some time every one must decide what he proposes to do and then go about to accomplish his purpose.

6 The classes in a trade school will have a smaller class unit. It will be impossible to give proper instruction to a class numbering over fifteen or twenty. Most of it must be, in the nature of the case, individual instruction.

7 Obviously, the trade school can not guarantee finished workmen any more than the law schools send out finished lawyers. The combination of school training and actual practice will make very efficient workmen. The trade school with its shopwork and its theory of trade practice will lay an excellent foundation upon which to build individual advancement when the worker enters the shop.

SYSTEM OF CONTINUATION SCHOOLS

Industrial education needs to extend to the still smaller industrial communities. It should relate itself in some way to specific trade needs. For example, consider the city of Corning. It has extensive glass manufacturing interests, which is the chief industry of the city. It is highly improbable that a trade school for glassworkers will ever be established unless we hit upon a different plan of organization than has been mentioned thus far. Again, there is the town of Depew. It has large railroad repair shops. It is unlikely that this community would, or even could, support a trade school for the machine trades and provide the necessary expensive equipment. There are at least 70 towns in the State like the two mentioned. They are industrially important and their workers are as worthy of educational attention as those who reside in Rochester or Utica. Some of these towns are Green Island, Watervliet, Endicott, Norwich, Cortland, Rouses Point, Matteawan, East Aurora, Malone, Dolgeville, Frankfort, Ilion, Dansville, Geneseo, Mount Morris, Honeoye Falls, St Johnsville, Whitehall, Skaneateles, and Middletown. To be sure, a vocational course may be established in their high schools but such a course can not be properly handled unless there is expensive equipment, although it must be granted that not all equipment for these schools is expensive or out of the range of possibilities of installation. The cost of equipment depends upon the trades represented.

It is safe to assume that the only solution open for these small places by which they can provide definite instruction in trade lines will be for them to establish day continuation schools which provide for an equitable distribution of the responsibilities

for instruction between the shop in which the youth is employed and the school in which he may be expected to attend for a few hours a week. All the bookwork in the schools applies directly to the business in which he finds himself, when the trade at which he is working calls for any special knowledge, while the shop itself supplies the trade atmosphere. In this way the boys and girls in the smaller industrial centers will be receiving vocational training and will not be neglected as they necessarily will be if the State considers a scheme of industrial training which includes only general industrial vocational courses in high schools and trade schools. The city of Lackawanna will serve as a good illustration. At present it has no manual training and no vocational training of any nature. It has a relatively small high school enrolment. It has a class of people which expects its children to go to work early. There is but one great industry in the city and that is steel manufacture. The interests of the city and of the industry are closely united. Something should be done in the way of vocational training, but no plan will work which does not provide on the part of the boy for "earning as well as learning," and for the avoidance on the part of the city of a great outlay of money for equipment. The continuation school seems to be the only solution.

Schools now open their doors to children in the evening; but evening instruction for the child between fourteen and seventeen is not effective when he is fatigued in will and body. Primarily evening schools should be for young men and women, for those who know what they want through the hard school of experience. No note of disparagement is intended of the value of evening schools for those who are old enough and physically developed enough to do the work. But the pace of the modern shop or department store makes it hard indeed for the growing boy or girl to do good evening school work after a long, hard day spent at a machine or at a bundle counter. Germany has largely superseded her evening schools for young apprentices by the more effective day continuation school. England has built practically her entire scheme of industrial education upon the evening school phase and is now seeing her mistake.

Signs are already indicated on the horizon that compulsory education laws will be so amended, developed and extended as to include much more than age maturity. The agitation for a

change of procedure is strong in such progressive states as Illinois, Ohio, New York and Massachusetts. The last general assembly of Ohio enacted a law authorizing boards of education to open continuation schools and to require the attendance of all between fourteen and sixteen years of age who have working papers unless they have completed the eighth grade. The attendance required can not exceed eight hours in the day time of each week. The board of education of Cincinnati was the first to pass resolutions in accordance with this act. It has notified all who are granted work certificates that they will be required to attend such schools after September 1911. These schools will therefore be compulsory. They will continue the education of those who go to work until they are sixteen. The common branches will be taught and a decided effort will be made "to keep control of children through this trying period, to imbue them with correct ideals of citizenship and to give them vocational guidance and training." The State already has the oversight of hours of labor, of sanitary conditions of the factory, of the use of certain dangerous machinery. If it has these rights, is it not fair to presume that it has the further right of overseeing the mental conditions under which children work and to apply corrective measures?

TEACHERS OF VOCATIONAL SCHOOLS

Trained teachers are needed for the vocational schools. Some cautious people would postpone the starting of these schools until we have a trained body of candidates from which to draw. Five years ago there was a need for perhaps five teachers in intermediate industrial bookwork. Not one who had experience in such work could be found, obviously, because previous to that time there were in existence no such schools from which to draw. There is perhaps a demand for one hundred such teachers now and the country at large can draw from a list of probably not more than twenty-five. For some years the arm of the balance will lean heavily toward the demand. Eventually it will be even. But at present it can hardly be expected that a thousand people will rush in to be trained when only one hundred positions await them. Even Germany finds that good industrial teachers are scarce. The man who is school trained is said to be theoretical; the ordinary skilled workman is "too heavy." A

man may know his trade but be unable to impart the knowledge to a pupil. One such teacher was overheard to remark to a pupil, "Get out of my way; I will plane the piece for you." He was a good workman but not a teacher.

It is probably true that it is impossible for the average normal training school to fit students for teaching in shop positions in the vocational schools unless these students have had shop experience before entering the school or obtained such experience after graduation. Neither will the present methods in normal training qualify graduates to place the proper emphasis on the bookwork of the vocational schools upon the application to various trades of science, mathematics, and shop accounts.

New York is the first state to undertake definitely the training of teachers for vocational work. It recognized at the start that no one source of supply would be sufficient, nor would one particular method of training be advisable. At present there are three State normal institutions, two universities, and two technical institutes which are training teachers for one or more of the proposed types of vocational schools. The last two classes of institutions have had courses for some years in the training of teachers for the manual, household and decorative arts. Recently some of these latter institutions have modified and enlarged the scope of their instruction to meet the more specific and practical requirements of the vocational school movement. Consequently the newer work even in the longer established courses is in the same experimental stage as that of the new courses established in the State normal institutions. Even though the work of training teachers is new, marked progress has been made in every class of instruction mentioned.

The State Normal College has two courses: one for training teachers of the manual arts, the other for training teachers for schools of homemaking. These courses have been in operation for two years.

The Buffalo State Normal School has vocational courses for men and women. In the household arts department with accommodations for comfortably handling forty-eight, the registration is seventy-two. In order to operate this department it has been found necessary to raise the admission requirements by excluding all who are not high school graduates and adding to the high school requirements physics and chemistry. The entering class in this department this year numbers eighteen. In the vocational work for men

nine were registered last year in the day school. It is a fact worth noting that all of these students work part time in the factories of the city while attending the school, thereby acquiring the skill which is desired for a teacher of vocational education, in addition to the pedagogical training which the school is imparting. These students, moreover, are having abundant opportunity for practice teaching, either in the school shops of the city or in the better equipped settlement houses.

This normal school has an evening training school for the mechanics who desire to fit themselves as teachers. In the fall of 1910 six men entered vocational evening classes and five completed the year's work. Four of these have returned for the second year's training. The second year for the vocational evening classes has opened with a registration of thirty-two new students. These are all men who are skilled mechanics and are coming to the school for the training in teaching. They appear to be a very intelligent and promising lot of men and the increase in registration over last year is an indication that the work is attracting favorable consideration.

The experience of both of these State institutions indicates that abstract subjects in the courses of study for these prospective teachers, such as psychology and history of education, are not desirable and that practically all of the efforts now given to these lines should be directed toward planning courses of work and equipment; to developing the art of teaching industrial subjects; and to the giving of instruction in shop mathematics, electricity and mechanics which are intimately connected with the trade instruction.

The Cortland State Normal School has started a course in training teachers of agriculture. Its work will not rival the agricultural colleges. It is intended to prepare teachers to carry on any of the science work, including the allied sciences of agriculture, outlined in the syllabus of 1910. The two-year course is open to men at least sixteen years of age, who have had farm experience, and who have a diploma of graduation from a course (or the equivalent) prescribed by the Commissioner of Education for admission to normal schools. The one-year course is open to young men who are high school graduates, or have had equivalent education, have had farm experience, hold a life certificate valid in this State and have had at least one year's successful experience in teaching.

A school garden, maintained in connection with the practice school, and an eleven-acre tract of splendid farm land under the control of

the school, offer exceptional opportunities for experimental work. Several good dairy farms are in the vicinity of the school. The owners of these farms have assured the authorities that their herds, barns and equipment will be at the service of the classes in agriculture. While the equipment of the school, both in point of laboratories and land, is very good, it is, and probably will be, impossible to equip and maintain a complete set of farms. The materials and equipment of dairy farms, truck gardens, fruit orchards, and general farms and the advice and assistance of the owners have been freely extended. This will put the school in touch with the neighborhood and the neighborhood in touch with the school — a relation which should exist both for the highest good of the school and the neighborhood.

The Rochester Mechanics Institute has an enviable record for training teachers for the older phases of industrial work in the public schools. Obviously, this work will be continued, but beginning with this year the institution is making an effort to interest a number of intelligent journeymen workers in training for the newer trade or vocational schools. The institution now has two such men enrolled. It also has four women with shop experience who are fitting themselves for teachers of dressmaking and millinery. Furthermore, the school has twenty-two students fitting themselves for manual training in the grades and high school and one hundred ninety-four women training for the household arts courses in the grades and high school.

Syracuse University has announced that it is about to group certain courses looking toward the necessary preparation of teachers and will add a specialist to give instruction in farm management subjects, expecting him to take charge of and properly correlate the work of students in agriculture in this university. The temporary supervisor of agricultural instruction writes to the division as follows: "Probably twelve students are preparing themselves to teach 'vocational' agriculture, i. e., in high schools qualifying for State aid. At least fifteen students are trying to qualify themselves to teach 'academic' agriculture, i. e., a one-year high school course. Of persons studying agriculture — the syllabus course — in the summer school we had five persons."

The Teachers College of Columbia University has strong courses for training teachers of vocational schools. The total candidates for degrees, diplomas, and certificates for the current academic year 1911–12 were:

Industrial arts:	
in education	49
in drafting	12
Commercial arts:	
in education	3
in clerical work	3
Household arts:	
in education	385
in technical fields	141
Total	593

In addition, special students are received who do not become candidates for degrees and diplomas. These students, for 1910–11, numbered 56 in industrial arts and 485 in household arts. Further, the evening technical course in industry and commerce in the school of industrial arts enrolled 369 in 1910–11. This makes a total registration in the two technical schools of the Teachers College of approximately 1500.

ATTITUDE OF FEDERATIONS OF LABOR

There is every evidence of a general indorsement within the State of the vocational work of the Department by those officially connected with the labor union movement. The executive council of the New York State Federation of Labor in session at Albany December 14 and 15, 1910, made an inspection of the vocational school work of Albany and at this time went into some of the details of the general State movement for vocational education. A letter was received from the secretary-treasurer in which he states that "the members were much impressed with what they saw and gave an unqualified approval of the work as conducted." There is absolutely no reason why such an organization should not give its approval, but it is a satisfaction to have definite approbation, based as it was upon a rather careful investigation.

VOCATIONAL GUIDANCE

While it is true that the time has passed for the let-alone policy of fitting people for vocations, there immediately comes up the tremendous questions, Whom shall we fit? For what shall we fit? How shall we fit? Vocational guidance and vocational schools are intimately related. We need not only vocational

schools but also information as to the conditions of employment, the wages, the future prospects of various occupations, as well as a knowledge of the educational opportunities and requirements for efficiency in the occupations. It is quite clear that provision for adequate training, for systematic counseling, and for definite knowledge of requirements of trade and industry go hand in hand. An organized plan is needed for advising young people as to the continuance of their schooling and the choosing of their life work.

In Germany and Scotland well-organized departments in the public schools have been established for this work. It does not consist of mere advice to pupils; neither does it concern itself merely with the functions of an employment bureau. It does aim through knowledge of the pupil's makeup, to give good advice, to guide him into the right kind of school and then to assist him in getting the right sort of a job. The duties of the Edinburgh bureau of educational information and employment follow:

1 To interview boys and girls and their parents or guardians, and advise them with regard to further educational courses and most suitable occupations.
2 To prepare leaflets and pamphlets or tabulated matter giving to the pupils information about continuation work.
3 To keep in touch with the general requirements of employers and revise from time to time the statistics about employment.
4 To prepare and revise periodically statement of the trades and industries of the district, with rates of wages and conditions of employment.
5 To keep a record of vacancies intimated by employers, and to arrange for suitable candidates having an opportunity to apply for such vacancies.

The city of Munich issues a series of little handbooks, now over a hundred in number, which fully analyze the possibilities of the various vocations. If our boys knew more about the years of patient waiting, or waiting for patients, or the average income of a New York city doctor, perhaps the profession would not be so overcrowded. If the public knew that the mason, although he may receive eight dollars a day, works only on an average of 176 days a year possibly there would be more fairness of statements regarding the wages paid this mechanic. If parents knew that men in brass foundries often had pulmonary troubles they would hesitate to apprentice weak-lunged boys to the industry.

If a boy really knew that low wages at the start may mean high wages at the end he would not be so anxious to get at the automatic machine which, through piecework, pays him not to learn something for himself but to earn much more for the company. Possibly there would be fewer children going into the blind alley of industries if they knew it had no opening at the other end.

The movement for husbanding the serving powers of youth is ever increasing its range. It is a part of the cry for conservation. In four cities of the State the beginnings have been made looking toward a more extended knowledge of the demands and opportunities of trade and industry.

For several years the students' aid committee of the High School Teachers Association, the chairman of which is E. W. Weaver of the Boys High School, Brooklyn, has done valuable work in assisting boys to define before leaving school their purposes in life and to consider the occupations best suited to realize them. Vocational petitions have been prepared for the boys and their parents. Nearly twenty leaflets have been published with such titles as Opportunities for Boys in Machine Shops, Choosing a Career, Vocational Adjustment of the Children of the Public Schools. A department of vocational guidance for the public schools of New York City has been recommended by the city superintendent.

The board of education of Poughkeepsie, through an expert and with the assistance of the city teaching force, has compiled a pamphlet which it is expected will be of some help to girls leaving school in securing the first condition of success — knowledge of a chosen vocation. The study includes the possibilities of salesmanship, stenography, telephone business, work in local factories, laundry work, work in private houses and institutions, manicuring, dressmaking etc. Under each heading are arranged the discussions of such topics as Education Required, Health, Advantages and Disadvantages of Particular Work, Hours, Salaries, Vacations, Reference Books.

The board of education of Jamestown has established a vocation bureau, which is under the direction of the high school principal, the principal of the junior department, the principal's clerk, the director of manual training, the supervisor of drawing, a commercial teacher and one section teacher from each of the four classes appointed by the president of the council. The

purpose of this bureau is (1) to furnish information and directions to pupils preparing for college or other institutions of learning; (2) to assist pupils who may need help in securing temporary employment in vacation and out-of-school hours; (3) to assist pupils not pursuing their education beyond the high school in determining their vocation and where possible to assist them in preparing therefor; (4) to help pupils to secure permanent positions, but it is not the policy of the bureau to recommend for permanent positions pupils who would otherwise remain in school; (5) to keep a record of the pupils who leave school before completing their course and the reasons for their leaving—this with a view of doing what may be done to remove the causes and of getting those who leave to enter the night school; (6) as far as may be possible, to cooperate with parents in the matter of vocation for pupils; (7) to ascertain and classify the various vocations best suited to young people with high school training, and to collect such information as will assist them to make their choice; and (8) to cooperate with employers (especially in Jamestown) who may need the services of young people with high school training or who may furnish assistance and information necessary to the work of the bureau, and to invite their assistance.

The principal of the Buffalo Technical High School has organized a bureau within his school which outlines a plan very similar to Jamestown. The Buffalo plan has one great advantage over all others — it is accompanied by a system of vocational training within the school system. While it is worth something *to study* the serving powers of children, it is worth more *to fit* them to serve after we have studied their industrial tastes and capacities.

The increasing complexity of our social and economic conditions makes it constantly more difficult for schools to fit in with the life about them. The number of vocations now open to youths of both sexes has greatly increased. We need vocational training but we need as well vocational knowledge based upon careful investigations. Every school principal should know the industries of his locality, the conditions for entrance, and the possibilities for success. The vocational teachers at least must have the information; it is a part of their work to search out the opportunities for preparation, as well as to provide the preparation. The interest in the movement for vocational guidance is now quite generally recognized. An excerpt is

taken from resolutions passed at the last meeting of the National Education Association:

"Our public educational system should make provision for instructing our youth concerning the various occupations, and the advantages which the several employments offer; and, in addition, boys and girls and their parents should, when they desire it, be able to receive such intelligent counsel as will enable the young people entering upon life's work to judge for what vocation the abilities and tastes of each best fit him, as well as to find the place and the opportunity to begin the work thus chosen."

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